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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/720,965

06/20/2001

George Wai-Kin Chan

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01/02/2002

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EXAMINER

ZUCKER, PAUL A

ART UNIT

PAPER NUMBER

1623

DATE MAILED: 01/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/720,965

Applicant(s)

CHAN ET AL

Examiner

Paul A. Zucker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other:

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
2. The disclosure is objected to because of the following informalities:
 - a. Page 3, line 3 The patent serial number "US5162508" should be changed to "US 5,162,508";
 - b. Page 11, line 12 The acronym "DTPAA" has not been defined;
 - c. Page 11, line 32 The word "aqueos" is misspelled.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 8 and 10 each recite the limitation "consisting of but not limited to" in lines 2-3. These claims are improper Markush claims. The terms "consisting of" and "not limited to" are mutually contradictory and their use together renders these claims indefinite.
4. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 fails to provide a structural definition for

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aminoquinolines (AQ). Applicant's intended scope for claim 2 is thus indeterminate and therefore claim 2 is indefinite.

5. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 4 and 7 each recite the limitation "[NΛ]_n" in lines 2, 1 and 4, respectively. The meaning of the limitation "[NΛ]_n" is undefined and it is unclear how this symbology is related to the structures of the claimed compounds. Claims 1, 4 and 7 and their dependent claims are therefore rendered indefinite.
6. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 4 and 7 each recite the limitations "DTPA" and/or "TTHA". The acronyms "DTPA" and "TTHA" are undefined in the claims. Claims 1, 4 and 7 and their dependent claims are therefore rendered indefinite.
7. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 4 and 7 each recite the limitations "(n=1)", "(TTHA)" and/or "(n=2)". The use of parenthetical expressions, for example "(TTHA)", renders the claims, and their dependents, indefinite because it is unclear whether the limitation(s) enclosed within parentheses are part of the claimed invention.

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8. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9, written as an independent claim, recites the limitation "compound of Formula I" in line 2. Formula I, however, is undefined and claim 9 is therefore rendered indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2, and 4-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al (Bioconjugate Chemistry 1997, 8, pages 127-132). Li discloses (Figure 1, page 128, upper left corner) the synthesis of a compound (2, structure center right of Figure 1) having the structure of instant Formula I in which R1 corresponds to an aminoquinoline and R2 corresponds to the isothiocyanate derived from *p*-aminophenylalanine. Li further discloses (Page 129, left column, center, first full paragraph) the conjugation of this compound to DNA oligo and spectrometric analysis (Page 129, left column, center-bottom, second full paragraph) in the presence of tetramethylrhodamine as an acceptor for the terbium complex and Cy5 as an acceptor for europium complex. Instant claims 1, 2, and 4-8 are thus anticipated by Li.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1,2, and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Li et al (Bioconjugate Chemistry 1997, 8, pages 127-132) and further in view of Gansow (US 4,824,986 04-1989). For the purposes of this rejection, Formula I in claim 9 is considered to be that defined in claim 1. Li discloses (Figure 1, page 128, upper left corner) the synthesis of a compound (2, structure center right of Figure 1) having the structure of instant Formula I in which R1 corresponds to an aminoquinoline and R2 corresponds to the isothiocyanate derived from *p*-aminophenylalanine. Li further discloses (Page 129, left column, center, first full paragraph) the conjugation of this compound to DNA oligo and spectrometric analysis (Page 129, left column, center-bottom, second full paragraph) in the presence of tetramethylrhodamine as an acceptor for the terbium complex and Cy5 as an acceptor for europium complex. Li neither discloses nor suggests a kit for the method of analysis disclosed. Gansow, however, discloses (Column 9, line 46 - column 10, line 64) the instant DTPA-isothiocyanate derived from *p*-aminophenylalanine lacking the fluorophoric group corresponding to the instant group R1. Gansow further teaches (Column 5, lines 15-22) the formation of metal

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chelates with terbium and europium as well as (Column 5, lines 53-63) the use of these compounds to form metal chelate –protein conjugates. Significantly, Gansow suggests (Column 2, lines 38-42) the use of his compounds in kits. Thus it would have been obvious for one of ordinary skill in the art to have performed the instant invention at the time applicant asserts it was made. The motivation would have been to provide the method of analysis disclosed by Li in a commercially acceptable kit form as suggested by Gansow. The expectation for success would have been near certitude since all elements of the invention have been either disclosed or taught by the references.

Allowable Subject Matter

11. Claim 3 is drawn to allowable subject matter. The following is a statement of reasons for the indication of allowable subject matter: The closest art of record Li et al (Bioconjugate Chemistry 1997, 8, pages 127-132) neither discloses nor fairly suggests the substitution of any of the compounds of Claim 3 for the fluorophoric aminoquinoline group of his invention.

Conclusion

12. Claims 1-10 are outstanding. Claims 1-10 are rejected.

13. The prior art made of record and not relied upon for rejections in this action are considered pertinent to applicant's disclosure.

Bozhevol'nov et al Zh. Anal. Khim., Determination of Organic Substances by Sensitized Luminescence of Rare Earths, 1979, 34(2) pages 344-347. English Abstract Only
Discloses the uses of m- and p-aminoacetophenones as sensitizers for europium and terbium.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 703-306-0512. The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Geist can be reached on 703-308-1701. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.



PAZ
December 28, 2001

GARY GEIST
SUPERVISORY PATENT EXAMINER
TECH CENTER 1600